Tecra R850 Detailed Product Specification[1]

Model Name: R850-S8510	Part Number: PT524U-00N002	UPC: 883974775125

Operating System C1 2

- Genuine Windows® 7 Professional 64-bit
- Genuine Windows® 7 Professional 32-bit

Processor[3] and Graphics[4]

- Intel® Core™ i3-2310M Processor
  - 2.10 GHz, 3MB Cache
- Mobile Intel® HM65 Express Chipset
- Mobile Intel® HD Graphics with 64MB-1287MB(64-bit) dynamically allocated shared graphic memory

Memory[5]

- Configured with 3GB DDR3 1333MHz (max 8GB)
- 2 memory slots. Both slots occupied.

Storage Drive[6]

- 320GB (7200 RPM) Serial ATA hard disk drive
- TOSHIBA Hard Drive Impact Sensor (3D sensor)

Fixed Optical Disk Drive[7]

- DVD SuperMulti drive supporting 11 formats
  - Maximum speed and compatibility: CD-ROM (24x), CD-R (24x), CD-RW (10x), DVD-ROM (8x), DVD-R (8x), DVD-R DL (6x), DVD-RW (6x), DVD+R (8x), DVD+R DL (6x), DVD+RW (8x), DVD-RAM (5x)

Display[8]

- 15.6" diagonal widescreen TruBrite® TFT display at 1366 x 768 native resolution (HD)
  - Native support for 720p content
  - 16:9 aspect ratio
  - LED backlit

Sound

- Built-in stereo speakers

Input Devices

- Premium Keyboard with 10-Key Numeric Pad
- Accupoint pointing device
- Touch pad pointing device with multi-touch control
- Touch pad Enable/Disable
- Control Buttons:
  - TOSHIBA eco utility™ (Energy-saving mode)
  - Touchpad on/off
  - Presentation button

Communications

- Webcam and microphone
- Intel® 82579V Gigabit Network Connection (10/100/1000)
- Intel® Centrino® Advanced-N 6230 (a/g/n) [9]
- Intel® Wireless Display (WiDi) Technology Capable
- Bluetooth® version 3.0 plus Enhanced Data Rate (EDR)

Expandability

- ExpressCard™/34 slot
- Memory Card Reader
  - Secure Digital, Secure Digital High Capacity, Mini SD Card, Micro SD Card, SDXC, Memory Stick, Memory Stick Pro, Memory Stick Pro Duo, Multi Media Card [shared slot may require adapter for use]

Ports

- Video
  - RGB
  - HDMI
- Audio
  - Microphone input port (shared port)
  - Headphone output port(shared port)
- Data
  - 4 USB ports (1 USB v3.0 port + 3 USB v2.0 ports (1 eSATA/USB combo with USB Sleep and Charge[10]))
  - RJ-45 LAN port
  - Docking connector
- Security
  - Fingerprint Reader
  - Slot for security lock

Physical Description

- Graphite Black Metallic with Line Pattern
- Dimensions (W x D x H Front/H Rear): 14.9" × 9.9" × 0.82"/1.19"
- Weight: Starting at 5.29 lbs. depending upon configuration [11]

Power

- 65W (19V 3.42A) 100-240V/50-60Hz AC Adapter.
- Dimensions (W x H x D): 4.25" x 1.81" x 1.16"
- Weight: starting at 0.49 lbs.

Battery[12]

- 6 cell/66Wh Lithium Ion battery pack
- Battery Life Rating (measured by MobileMark™ Productivity 2007)
  - Included 6 cell battery: up to 8 hours, 40 minutes

Toshiba EasyGuard®[13]

- Protect & Fix
  - HALT Tested Design
  - LCD Cover Face and Point pressure Resistant Design
  - Hinge Design Enhancement
  - Spill Resistant Keyboard
  - TOSHIBA HDD protection (3D Accelerometer)
  - TOSHIBA PC Diagnostic Tool
  - TOSHIBA PC Health Monitor
  - TOSHIBA Shock Protection System
- Secure
  - Execute Disable Bit
  - Fingerprint Reader (includes software for password and identity management)
  - Infineon TPM Software Professional Package
  - Multiple-Level Password Utilities
  - Reinforced Security Cable Lock Slot
  - TOSHIBA Secure Digital Token Utility
  - Trusted Platform Module v1.2
- Connect
  - Bluetooth Stack for Windows by Toshiba
  - Diversity Antenna
  - TOSHIBA ConfigFree®
  - Voice-over-IP Ready Design
  - Wireless Communication On/Off Switch
- Optimize
  - FN Shortcut Keys
  - TOSHIBA Assist
  - TOSHIBA eco Utility™
  - TOSHIBA Disc Creator
  - TOSHIBA Device Access Control
  - TOSHIBA Power Management Extension
  - TOSHIBA Password Utilities
  - TOSHIBA Recovery Media Creator
  - TOSHIBA Sleep Utility
  - TOSHIBA Zooming Utility

Software C1 14

- Toshiba Software and Utilities
  - Bluetooth Monitor
  - TOSHIBA App Place℠
  - TOSHIBA BookPlace™
  - TOSHIBA Bulletin Board
  - TOSHIBA Face Recognition
  - TOSHIBA Fingerprint Utility
  - TOSHIBA HDD/SSD Alert

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  - TOSHIBA HW Setup Utility
  - TOSHIBA Password Utility
  - TOSHIBA 180 Rotation Utility
  - TOSHIBA ReelTime
  - TOSHIBA PC Health Monitor
  - TOSHIBA Service Station
  - TOSHIBA Value Added Package
  - TOSHIBA Web Camera Application
- Third-party Software
  - Adobe® Acrobat® Reader
  - Google® Toolbar
  - Google® Chrome
  - Intel® Wireless Display Technology
  - Internet Explorer 8
  - Microsoft® Office Starter 2010[15]
  - Microsoft® Windows Media Player 12
  - Microsoft® Silverlight™
  - Microsoft® Live Essentials
    - Photo Gallery
    - Messenger
    - Mail
    - Writer
    - Movie Maker
- Special Offers and Trial Software
  - KidZui™, The Internet for Kids
  - NetZero® Internet Service
  - Norton Internet Security™ 2011 (30-day trial subscription)
  - Skype®
  - Toshiba Online Backup (30-day trial subscription)

Environmental Specifications

- This product is RoHS[16] compatible
- Energy Star Qualified
- EPEAT™ Gold Compliant

	Operating	Non-operating
Temperature[17]	5° to 35° C	-20° to 68° C
Thermal Gradient	15° C per hour (max)	20° C per hour
Relative Humidity (non-condensing)	20% to 80%	10% to 90%
Altitude (relative to sea level)	-60 to 3,000 meters	-60 to 10,000 meters
Shock	10G	60G
Vibration	0.5G, 0.25G w/ODD	1.0G

3 YEAR STANDARD LIMITED WARRANTY[18]

- Includes International Limited Warranty for obtaining service when traveling outside the United States.

Service Upgrades and Extensions

Toshiba offers many different enhanced services such as SystemGuard®, On-Site Repair, and ServiceExpress to provide additional support to your notebook PC. For a full description and complete list of programs and program terms and conditions, please visit www.pcsupport.toshiba.com.

Accessories

For additional and most updated accessories, please visit www.accessories.toshiba.com

Memory Upgrade

Part Number	Description
PA3918U-1M2G	Toshiba 2GB DDR3-1333MHz Memory Module
PA3918U-1M4G	Toshiba 4GB DDR3-1333MHz Memory Module

Power

Part Number	Description
PA3715U-1ACA	Toshiba 75W Global AC Adapter
PA3905U-1BRS	Toshiba Primary Li Ion Battery Pack (6 Cell)

Expansion

Part Number	Description
PA3916U-1PRP	Toshiba Hi-Speed Port Replicator II

Carrying Case

Part Number	Description
PA1446U-1CS6	Toshiba 16" Envoy Ballistic Polyester Carrying Case (Fits up to 16")
PA1448U-1RS6	Toshiba 16" Envoy Roller Case (Fits up to 16")
PA1463U-1SP6	Toshiba 16" Metropolitan Carrying Case (Fits up to 16")
PA1505U-1CS6	Toshiba 16" Extreme Briefcase (Fits up to 16")

Storage

Part Number	Description
PA3877U-1M8B	Toshiba 8GB USB Hi-Speed Swivel-Retractable Flash Drive
PA3877U-1MAB	Toshiba 16GB USB Hi-Speed Swivel-Retractable Flash Drive
PA3877U-1MBB	Toshiba 32GB USB Hi-Speed Swivel-Retractable Flash Drive
E05A050CAU3XW	Toshiba 500GB USB 3.0 Canvio 3.0 Portable Hard Drive, Black with White Accents
E05A075CAU3XW	Toshiba 750GB USB 3.0 Canvio 3.0 Portable Hard Drive, Black with White Accents
E05A100PBU3XW	Toshiba 1TB USB 3.0 Canvio 3.0 Plus Portable Hard Drive, Black with White Accents

Subject to Change

While Toshiba has made every effort at the time of publication to ensure the accuracy of the information provided herein, product specifications, configurations, prices, system/component/options availability are all subject to change without notice. For the most up-to-date product information about your computer, or to stay current with the various computer software or hardware options, visit Toshiba's Web site at http://www.pcsupport.toshiba.com

Return Policy

Notwithstanding anything to the contrary in any third party License Agreement or product documentation supplied with your PC, Toshiba America Information Systems, Inc. ("TAIS") does not accept the return of component parts, or bundled software, that have been removed from the PC system. Pro-rata refunds on individual PC components or bundled software, including the operating system, will not be granted. If you wish to return a complete PC system, contact the TAIS dealer where you purchased the product, and comply with the dealer's standard return policies and procedures.

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TAIS PC Support website: http://pcsupport.toshiba.com

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[C1] ***64-bit computing:***
64-bit computing requires that the following hardware and software requirements are met:
- 64-bit Operating System
- 64-bit CPU, Chipset and BIOS (Basic Input/Output System)
- 64-bit Device drivers
- 64-bit applications

Certain device drivers and/or applications may not be compatible with a 64-bit CPU and therefore may not function properly. See "Detailed Specs" for more information.

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[1] **Product Series Legal Footnote**. The product specifications and configuration information are designed for a product Series. Your particular model may not have all the features and specifications listed or illustrated. For more detailed information about the features and specifications on your particular model, please visit Toshiba's Web site at pcsupport.toshiba.com.

Product Offering Legal Footnote. Toshiba America Information Systems, Inc. reserves the right to modify or withdraw this offer at anytime without notice

[2] **Operating System**.

Also see ***64-Bit Computing*** Legal Footnote, if applicable.

Certain Microsoft® software product(s) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft's privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software product(s) or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply).

Some software may differ from its retail version (if available), and may not include user manuals or all program functionality.

Offers. Offer terms, duration and product availability all subject to change without notice

[3] **Processor (Central Processing Unit)**. Also see ***64-Bit Computing*** Legal Footnote, if applicable.

CPU performance in your computer product may vary from specifications under the following conditions:

1. use of certain external peripheral products
2. use of battery power instead of AC power
3. use of certain multimedia, computer generated graphics or video applications
4. use of standard telephone lines or low speed network connections
5. use of complex modeling software, such as high end computer aided design applications
6. use of several applications or functionalities simultaneously
7. use of computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)
8. use of computer at temperatures outside the range of 5°C to 30°C (41°F to 86° F) or >25°C (77°F) at high altitude (all temperature references are approximate and may vary depending on the specific computer model – please visit the Toshiba website at www.pcsupport.toshiba.com for details).

CPU performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shut-down. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. Use your computer product only under recommended conditions. Read additional restrictions under "Environmental Conditions" in your product "Detailed Specs." Contact Toshiba Technical Service and Support for more information.

[4] **Graphics (Graphics Processing Unit)**. GPU performance may vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and may decrease considerably when operating in battery power mode.

Total Available Graphics Memory is the total of, as applicable, Dedicated Video Memory, System Video Memory and Shared System Memory. Shared System Memory will vary depending on system memory size and other factors.

[5] **Memory (Main System)**. Part of the main system memory may be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors. Computers configured with a 32-bit operating system can address up to 3GB of system memory. Only computers configured with a 64-bit operating system can address 4 GB or more of system memory.

[6] **Storage Drive**
Computer (Internal) HDD Capacity. One Gigabyte (GB) means 10^9 = 1,000,000,000 bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1 GB = 2^{30} = 1,073,741,824 bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the computer includes one or more pre-installed operating systems, such as Microsoft Operating System and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

[7] **Optical Drive**. Due to manufacturing and quality variations in third party optical media (e.g., CD or DVD) or optical media players/recorders, in certain cases, your Toshiba optical drive may not record on certain optical media that bear the applicable logo, or playback optical media recorded by other PCs or optical media recorders. Additionally, certain optical

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media recorded on your optical drive may not playback or operate properly on other PCs or optical media players. These problems are not due to any defect in your Toshiba PC or optical drive. Please refer to your PC's product specification for listing of specific format compatibilities.

Recording or viewing of certain optical media may be limited or prevented in accordance with applicable copy protection standards.

[8] **Display**. Small bright dots may appear on your screen display when you turn on your PC. Your display contains an extremely large number of thin-film transistors (TFT) and is manufactured using high-precision technology. Any small bright dots that may appear on your display are an intrinsic characteristic of the TFT manufacturing technology. Over a period of time, and depending on the usage of the computer, the brightness of the screen will deteriorate. This is also an intrinsic characteristic of the screen technology. When the computer is operated on battery power, the screen with dim and you may not be able to increase the brightness of the screen while on battery power.

[9] **Wireless-N.** The wireless adapter is based on a draft release version of the IEEE 802.11n specification, and may not be compatible with, or support all features (e.g., security) of, certain Wi-Fi® equipment**.**

[10] **USB Sleep & Charge.** The "USB Sleep & Charge function" may not work with certain external devices even if they are compliant with the USB specification. In those cases, turn the power of the computer ON to charge the device.

[11] **Weight**. Weight may vary depending on product configuration, vendor components, manufacturing variability and options selected.

[12] **Battery Life Rating**. Measured by MobileMark® 2007. MobileMark is a trademark of the Business Applications Performance Corporation. Rating based on either MobileMark Productivity 2007 modeling a user performing common mobile office activities or Reader 2007 modeling a user reading documents. See “Detailed Specifications” for test used.

Details of MobileMark 2007 testing are available at www.bapco.com

Rating is for comparison purposes only, and does not indicate the battery life that will be obtained by any individual user. Actual battery life may vary considerably from specifications depending on product model, configuration, applications, power management settings and features utilized, as well as the natural performance variations produced by the design of individual components. The battery life rating is only achieved on the select models and configurations tested by Toshiba under the specific test settings at the time of publication and is not an estimate of a system’s battery life under any conditions other than the specific test settings.

After a period of time, the battery will lose its ability to perform at maximum capacity and will need to be replaced. This is normal for all batteries.

[13] **EasyGuard**. Toshiba EasyGuard™ technology comprises a number of features some of which may or may not be available on a particular Toshiba notebook depending on the model selected. See www.easyguard.toshiba.com for detailed information.

[14] **Software**. Some software may differ from its retail version (if available), and may not include user manuals or all program functionality.

Certain Microsoft® software products (including Microsoft Office Small Business Accounting if applicable) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft’s privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software products or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply).

Internet access is required to enable certain functionality of certain Microsoft products(including Microsoft Office Small Business Accounting 2006) which may be included with this computer.

[15] **Microsoft Office Starter 2010.** Office Starter consists of reduced-functionality versions of Word and Excel with advertising. PowerPoint, Outlook, OneNote, Access and Publisher are not included.

[16] **RoHS.** This notebook is compatible with European Union Directive 2002/95/EC, Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS), which restricts use of lead, cadmium, mercury, hexavalent chromium, PBB, and PBDE. Toshiba requires its notebook component suppliers to meet RoHS requirements and verifies its suppliers' commitment to meeting RoHS requirements by conducting component sampling inspections during the product design approval process.

[17] **Temperature (Environmental) Conditions**. All temperature references are approximate and the performance of your computer may vary from specifications even when operating within the recommended temperature range.

[18] **Warranty:** The terms and conditions of Toshiba’s standard limited warranty are available at www.warranty.toshiba.com.

[18] **Warranty:** The terms and conditions of Toshiba’s standard limited warranty are available at www.warranty.toshiba.com.

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